

What is claimed:

1. An apparatus for trapping ions, comprising:
 - (a) an array of electrodes;
 - (b) applying AC voltages to electrodes of said array of electrodes;
 - (c) at least one DC offset voltage applied to said electrodes of said array of electrodes;
 - (d) a counter electrode;
 - (e) at least one DC voltage applied to said counter electrode; and
 - (f) means to control said AC and DC voltages to trap ions in a region between said array of electrodes and said counter electrode.
2. An apparatus according to claim 1 wherein said AC voltages have substantially opposite relative phases.
3. An apparatus according to claim 1 wherein the frequency of said AC voltages is radio frequency.
4. An apparatus according to claim 1 wherein said electrode array is formed by electrodes comprising metal wire tips.
5. An apparatus according to claim 1 wherein said electrode array is formed by electrodes comprising metal wires.